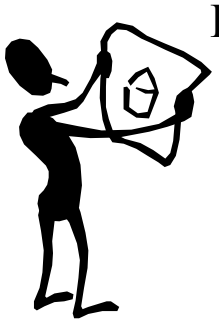
CPSC 481

Foundations and Principles of Human Computer Interaction



James Tam

CPSC 481 Administrative

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- Human computer interaction
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Office hours
- Monday and Wednesday (12:00 – 12:50)
- by email any time
- by appointment: email or phone to arrange one
- drop in for urgent requests (but no guarantees!)

Feedback

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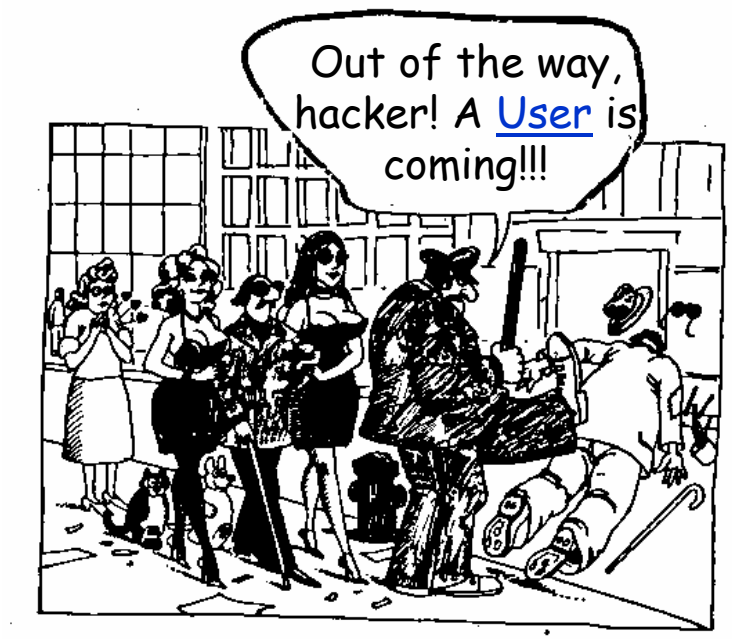

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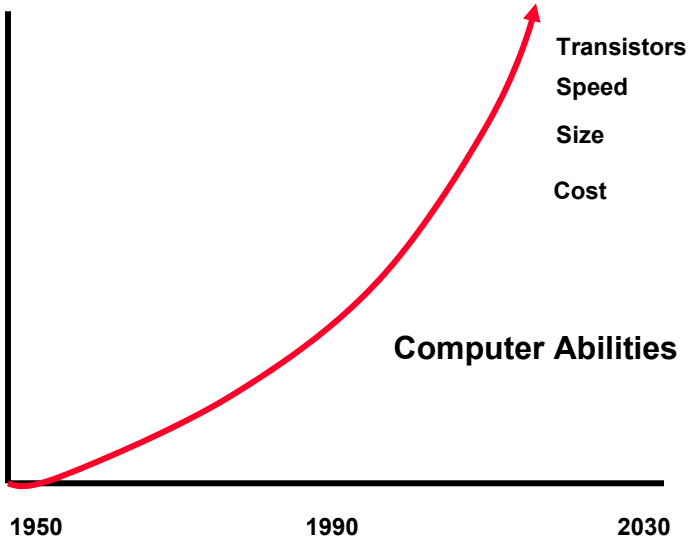
Moore's Law



(These slides are variations of those presented by Bill Buxton)

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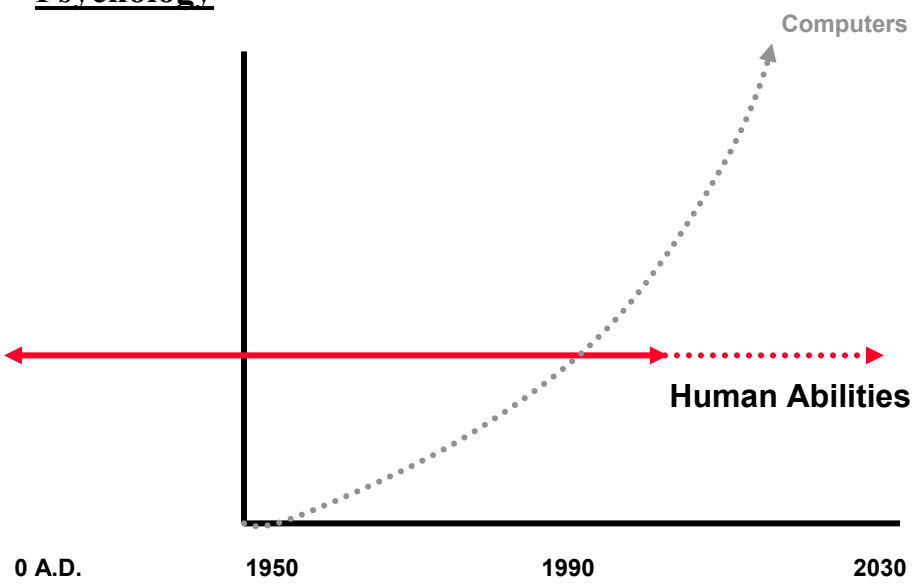
Psychology



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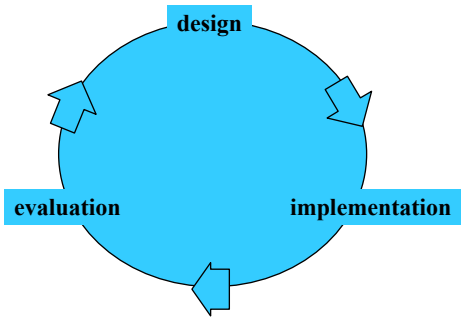
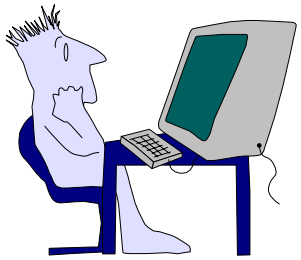
Human Computer Interaction

A discipline concerned with the

design,
implementation, and
evaluation

of interactive computing systems for human use





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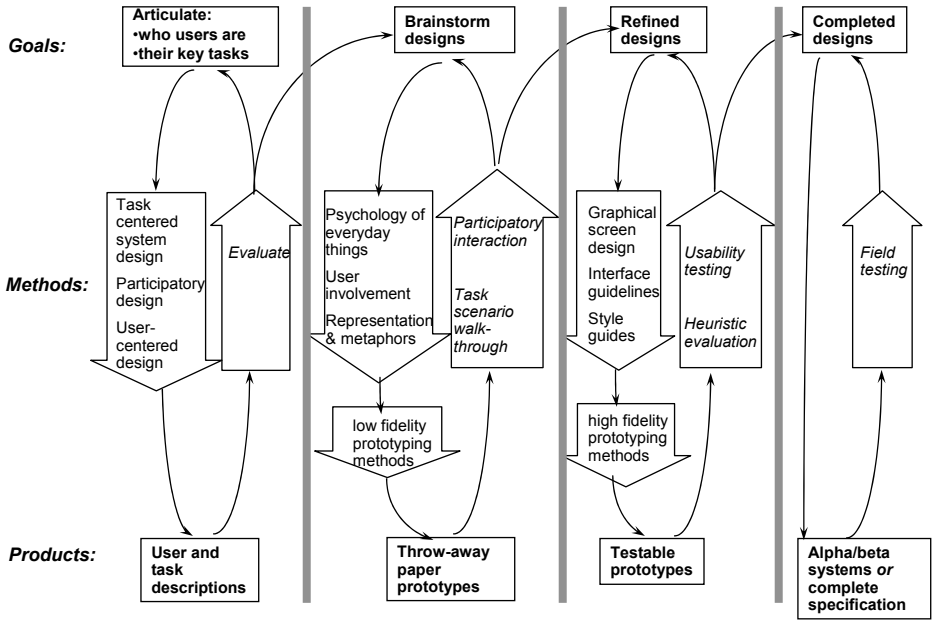
Interface Design and Usability Engineering



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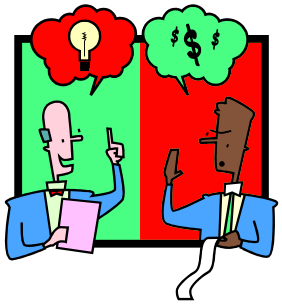
Why an interface design process?



63% of large software projects go over cost

- managers gave four usability-related reasons
  - users requested changes
  - overlooked tasks
  - users did not understand their own requirements
  - insufficient user-developer communication and understanding

Usability engineering

- pay a little now, or pay a lot later!
- far too easy to jump into detailed design that is:
  - founded on incorrect requirements
  - has inappropriate dialogue flow
  - is not easily used
  - is never tested until it is too late

Foundations for designing interfaces

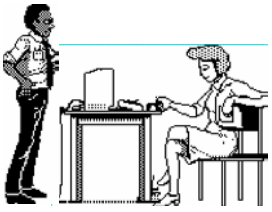
Overview

- Introduction to the course and to HCI

Understanding users and their tasks

- Task-centered system design
  - the task-centered process
  - developing task examples
  - task scenarios and walkthroughs

Designing with the user



- User centered design and prototyping
  - user centered system design
  - low fidelity prototyping methods
- Evaluating interfaces with users: Qualitative methods
  - observe people using systems via various methods
  - detect inappropriate design and correct by iterative design

Foundations for designing interfaces

Designing visual interfaces

- Beyond screen design
  - representations and metaphors
- Graphical screen design
  - the placement of interface components on a screen
- Psychopathology/psychology of everyday things
  - what makes visual design work?

Principles for design

- Design principles, guidelines, and usability heuristics
  - general design guidelines
  - using guidelines as heuristics to discover usability problems

Objectives

At the end of this course, you will

- know what is meant by good design (guidelines and models that can be applied to interface design)
- know and have applied a variety of methods for involving the user in the design process
- have experienced building applications through various methods and systems
- know and have applied methods to evaluate interface quality
- have sufficient background to
  - apply your training in industry
  - continue your education

How you will be evaluated

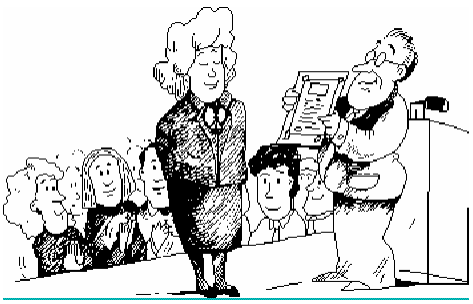
1) Assignments (50%)

- Portfolio:
  - Assignment 1: Task centered design and prototyping (13%)
  - Assignment 3: System redesign, implementation, and evaluation (25%)
- Usability study:
  - Assignment 2: Usability evaluation of a large system in everyday use (12%)

2) Exams (50%)

- mid-term (20%)
- final (30%)

Note: you must pass both exam components and assignment components to pass the course



Labs

Critical to your success in assignments

- elaboration of details
- learn specific skills
- discuss intermediate results
- class feedback on assignment milestones

Text and additional references

Lecture notes

- sold at cost by the department
- available on the web
(http://www.cpsc.ucalgary.ca/~tamj/481/),
- extra readings (required and optional)

Optional text

Baecker, Grudin, Buxton, and Greenberg (1995)
"Readings in Human Computer Interaction: Towards the Year 2000"

Optional programming manuals

- as required, your choice of what to get

Other resources(e.g. Visual Basic examples)

- see the web site
http://pages.cpsc.ucalgary.ca/~saul/vb_examples/index.html